

Disclosures Concerning Greenhouse Gas-Related Claims

In this document, Boeing discloses the basis for the company's current claims concerning "net zero" emissions, carbon neutrality, and significant reductions in greenhouse gas emissions. These claims are primarily presented in our latest [Sustainability Report](#).

NOTICE CONCERNING HISTORIC STATEMENTS: Boeing's website contains historic statements, including past versions of Boeing's Sustainability Report, which are retained for their historical value consistent with Boeing's culture of transparency and continuous improvement. Readers should refer to Boeing's latest Sustainability Report for the Company's current perspective.

Achievement or Goal	Information Documenting Achievement or Interim Progress	Science-Based Target or Relevant Sector Methodology	Independent third party verification	Additional Disclosures
Achievement : Maintained net-zero emissions for Scope 1 and Scope 2				
<p>"Since 2020, Boeing has maintained workplace net-zero GHG emissions at manufacturing sites and other facilities (Scope 1 and Scope 2) and in its business travel (Scope 3, Category 6) by expanding conservation and renewable energy use while securing carefully selected, third party-verified offsets for the remaining GHG emissions."</p> <p>"Assembled in South Carolina at a net-zero emissions manufacturing facility, the primarily composite structure..."</p>	<p>In 2020, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 554,000 metric tons CO₂e • Scope 2 market-based: 526,000 tons CO₂e • Scope 3, Category 6 (business travel): 92,000 metric tons CO₂e <p>Boeing offset these 2020 estimated emissions with 1,485,000 metric tons CO₂e of purchased offsets.</p> <p>In 2021, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 612,000 metric tons CO₂e • Scope 2 market-based: 446,000 metric tons CO₂e • Scope 3, Category 6 (business travel): 88,000 metric tons CO₂e 	<p>Information about our offsetting methodology can be found in the Offset factsheet.</p>	<p>Our Scope 1, Scope 2, Scope 3 emissions estimates and renewable energy certificate purchases are independently verified by DNV.</p> <p>Our offsets must be certified by Verra,</p> <p>American Carbon Registry, or Gold Standard, which ensures projects are verified by a third-party.</p>	<p>DNV GL Assurance Statement for GHG Emissions and Water Withdrawal 2023</p> <p>Offset Factsheet</p> <p>2024 CDP Climate Survey</p> <p>GHG Supplement</p> <p>Report on Net Zero Indicator</p> <p>BCA Commercial</p>

	<p>Boeing offset these 2021 estimated emissions with 1,207,500 metric tons CO₂e of purchased offsets.</p> <p>In 2022, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 642,000 metric tons CO₂e • Scope 2 market-based: 401,000 metric tons CO₂e • Scope 3, Category 6 (business travel): 186,000 metric tons CO₂e <p>Boeing offset these 2022 estimated emissions with 1,250,000 metric tons CO₂e of purchased offsets.</p> <p>In 2023, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 536,000 metric tons CO₂e • Scope 2 market-based: 380,000 metric tons CO₂e • Scope 3, Category 6 (business travel): 254,000 metric tons CO₂e <p>Boeing offset these 2023 estimated emissions with 1,303,000 metric tons of CO₂e of purchased offsets.</p> <p>Annual emissions were calculated in accordance with the Greenhouse Gas Protocol (GHGP). (SOURCE: 2024 Sustainability & Social Impact Report, Page 73, Key ESG Table).</p> <p>Offsets purchased are disclosed in our annual CDP reporting and are disclosed in Appendix A, below.</p>			
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Achievement: Reductions in Scope 1 and 2 Emissions				
<p>“Achieved 16% absolute GHG reduction at year-end 2022 from 2017 base year toward 2030 goal (Scope 1 and 2).”</p> <p>“Achieved 26% absolute GHG reduction at year-end 2023 from 2017 base year toward 2030 goal (Scope 1 and Scope 2).”</p>	<p>In 2022, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 642,000 metric tons CO₂e • Scope 2 market- based: 401,000 metric tons CO₂e <p>In 2023, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 536,000 metric tons CO₂e • Scope 2 market-based: 380,000 metric tons CO₂e 	<p>These figures are calculated in accordance with the Greenhouse Gas Protocol (GHGP).</p>	<p>Our Scope 1, Scope 2, Scope 3 emissions, and renewable energy certificate purchases are independently verified by DNV.</p>	<p>DNV GL Assurance Statement for GHG Emissions and Water Withdrawal 2023</p>

	<p>In 2017, Boeing estimates that it emitted a total of:</p> <ul style="list-style-type: none"> • Scope 1: 634, 000 metric tons CO₂e • Scope 2 market-based: 609,000 metric tons CO₂e <p>(SOURCE: GHG Supplement)</p>	Our Scope 1 and 2 emissions targets were developed in support of the global ambition of limiting warming to 1.5 °C as part of the Paris Agreement.		2024 CDP Climate Survey GHG Supplement Report on Net Zero Indicator
Achievement: Commercial aircraft fuel efficiency				
<p>20%-30% improved efficiency in Boeing's newest airplanes compared with the in-service airplanes they replace</p> <p>Today, there are more than 10,000 Boeing commercial jetliners in service; airplanes that fly farther on less fuel, airplanes that reduce airport noise and emissions</p> <p>Incorporating advanced technology winglets and efficient engines, the 737 MAX family offers excellent economics, reducing fuel use and emissions by 20 percent while producing a 50 percent smaller noise footprint than the airplanes it replaces.</p>	Efficiency estimates are based on standardized aircraft configurations and operational assumptions. Airline configuration and operational choices may affect estimates and in-service results. See Appendix B below.	N/A	N/A	Boeing Commercial Airplanes: A Better Way to Fly 737 MAX 737 MAX By Design 777-8 Freighter 787 Dreamliner 787 Dreamliner By Design BBJ 737 MAX Family

Goal: Reduction in Scope 1 and Scope 2 GHG from 2017 base year				
“By 2030, achieve 55% absolute reduction in Scope 1 and Scope 2 GHG from 2017 base year.”	<p>Interim progress from 2017 to present day is provided in our GHG supplement.</p> <p>In 2022, we achieved an estimated 16% absolute GHG reduction from the 2017 base year toward our 2030 goal (Scope 1 and 2). See above.</p> <p>In 2023, we achieved an estimated 26% absolute GHG reduction at year-end 2023 from 2017 base year toward 2030 goal (Scope 1 and Scope 2).</p>	<p>These figures are calculated in accordance with the Greenhouse Gas Protocol (GHGP).</p> <p>Our Scope 1 and 2 emissions targets were developed in support of the global ambition of limiting warming to 1.5 °C as part of the Paris Agreement.</p>	Our Scope 1, Scope 2, Scope 3 emissions, and renewable energy certificate purchases are independently verified by DNV.	<p>DNV GL Assurance Statement for GHG Emissions and Water Withdrawal 2023</p> <p>2024 CDP Climate Survey</p> <p>GHG Supplement</p> <p>Report on Net Zero Indicator</p>

Appendix A: The Boeing Company Carbon Offset Retirements 2020-2023



The Boeing Company Retired Carbon Offsets 2020-2023									
Year In Which Retired Offsets Were Applied	Project Name	Standard	Project Type	Location	Region	Vintage	Volume (tCO2e)	CORSIA	Project ID
2020	Hyundai Steel Waste Energy Cogeneration	VCS	Cogen	South Korea	Asia	2014	200,000	NO	VCS786
2020	GUOHUA WULATE ZHONGQI CHUANJING PHASE II WIND FARM PROJECT	VCS	Wind	China	Asia	2014	73,854	NO	VCS 1200
2020	China Wind/Biomass Non-CORSIA (Multiple Projects)	VCS	Wind	China	Asia	2014-2019	276,346	NO	Multiple
2020	Boyabat Hydroelectric Plant	VCS	Hydro	Turkey	Europe	2012-2014	50,000	NO	VCS1345
2020	Renewable Solar Power Project by Adani Green Energy Limited	VCS	Solar	India	Asia	2019-2020	300,000	YES	VCS1815
2020	RENEWABLE SOLAR POWER PROJECT BY ADANI	VCS	Solar	India	Asia	2019	110,000	YES	VCS2043
2020	Kurtkaya Turkey Wind	GS	Wind	Turkey	Europe	2016-2017	50,000	NO	GS2497
2020	Uruguay Reforestation	VCS	Forest	Uruguay	Latin America	2010-2018	150,000	NO	VCS960
2020	Spartanburg County LFG	VCS	LFG	South Carolina	North America	2017-2019	50,000	NO	VCS947
2020	NOUAKCHOTT 30 MW WIND POWER PLANT	VCS	Wind	Mauritania	Africa	2018-2019	10,000	YES	VCS 1733
2020	Foam Blowing Agent Project 001B	ACR	Industrial Emissions	Missouri	North America	2017-2019	25,000	YES	ACR446
2020	Namibia Solar PV	VCS	Solar	Namibia	Africa	2015	25,000	NO	VCS1885
2020	Cordillera Azul REDD+ Project	VCS	Forest	Peru	Latin America	2014-2016	75,000	NO	VCS985
2020	Darkwoods Forest Carbon Project	VCS	Forestry	Canada	North America	2012 -2018	20,000	NO	VCS607
2020	Southern Cadamom REDD+ Project	VCS	Forestry	Cambodia	Asia	2012-2016	25,000	NO	VCS1748
2020	Kootznookoo Alaska Forest Carbon	ACR	Forestry	Alaska	North America	2014-2018	20,000	NO	ACR499
2020	Winston Creek Forest Carbon Project	ACR	Forestry	Washington	North America	2017-2018	25,000	YES	ACR389
2021	ACR Foam Blowing Agent Project 002D	ACR	Industrial Process Emissions	USA	North America	2018	19,730	NO	ACR449
2021	Foam Blowing Agent Project 001L	ACR	Industrial Process Emissions	USA	North America	2019	15,270	NO	ACR551
2021	Pembelik Hydro Electricity Project	VCS	Hydro	Turkey	Europe	2019	50,000	NO	VCS1198
2021	Pembelik Hydro Electricity Project	VCS	Hydro	Turkey	Europe	2019	50,000	NO	VCS1198
2021	Pembelik Hydro Electricity Project	VCS	Hydro	Turkey	Europe	2019	50,000	NO	VCS1198
2021	Pembelik Hydro Electricity Project	VCS	Hydro	Turkey	Europe	2019	40,501	NO	VCS1198
2021	National Bio Energy Tongliao Biomass Power Plant	GS	Biomass energy	China	Asia	2018	70,000	NO	GS2502
2021	Ghani Solar Renewable Energy Power Project	VCS	Solar	India	Asia	2020	11	NO	VCS1792
2021	Haikou Rural Methane Digesters Project in Hainan Province	GS	Methane Digesters	China	Asia	2018	29,900	NO	GS2664
2021	Winston Creek Forest Carbon	ACR	Forestry	USA	North America	2018	20,000	YES	ACR389
2021	Akbuk Wind Power Plant	GS	Wind	Turkey	Europe	2020	33,829	YES	GS2484
2021	Akbuk Wind Power Plant	GS	Wind	Turkey	Europe	2021	15,377	YES	GS2484
2021	Akbuk Wind Power Plant	GS	Wind	Turkey	Europe	2019	9,437	YES	GS2484
2021	Allain Duhangan Hydroelectric Project (ADHP)	VCS	Hydro	India	Asia	2019	150,000	NO	VCS2028
2021	Guohua Wulate Zhongqi Phase I 49.5 MW Wind Farm Project	VCS	Wind	China	Asia	2017	21,086	NO	VCS1204
2021	Guohua Wulate Zhongqi Phase I 49.5 MW Wind Farm Project	VCS	Wind	China	Asia	2018	147,633	NO	VCS1204
2021	REDD+ Project Resguardo Indígena Unificado Selva de Mataven (RIU SM)	VCS	Forestry	Colombia	South America	2019	7,500	NO	VCS1566
2021	REDD+ Project Resguardo Indígena Unificado Selva de Mataven (RIU SM)	VCS	Forestry	Colombia	South America	2018	50,000	NO	VCS1566
2021	PACAJAI REDD+ Project (replacement 2252)	VCS	Forestry	Brazil	South America	2019	30,000	NO	VCS981
2021	PACAJAI REDD+ Project (replacement 2252)	VCS	Forestry	Brazil	South America	2019	12,609	NO	VCS981
2021	PACAJAI REDD+ Project (replacement 2252)	VCS	Forestry	Brazil	South America	2019	7,391	NO	VCS981
2021	Ningbo Yinzhou Landfill Gas Recovery and Utilization Project	VCS	Landfill Gas	China	Asia	2018	43,804	NO	VCS2099
2021	Ningbo Yinzhou Landfill Gas Recovery and Utilization Project	VCS	Landfill Gas	China	Asia	2019	16,262	NO	VCS2099
2021	Three Gorges New Energy Jiuquan Co., Ltd Guazhou 100MW Solar Power Project	VCS	Solar	China	Asia	2019	40,737	YES	VCS1444
2021	Inner Mongolia Yihewusu Phase II 49.5 MW Wind Power Project	VCS	Wind	China	Asia	2017	37,950	YES	VCS1001
2021	Inner Mongolia Keyihe IFM (conversion of logged to protected forest) Project	VCS	Forestry	China	Asia	2017	11,838	YES	VCS1718
2021	Inner Mongolia Keyihe IFM (conversion of logged to protected forest) Project	VCS	Forestry	China	Asia	2017	20,000	YES	VCS1718
2021	Dongtai Phase II Wind Power Project	VCS	Wind	China	Asia	2017	10,000	NO	VCS1356
2021	Dongtai Phase II Wind Power Project	VCS	Wind	China	Asia	2017	10,000	NO	VCS1356
2021	Dongtai Phase II Wind Power Project	VCS	Wind	China	Asia	2017	10,000	NO	VCS1356
2021	Hydroelectric Project in Kinnaur District in Himachal Pradesh	VCS	Hydro	India	Asia	2019	25,000	NO	VCS1742
2021	Adiguzel II Hydroelectric Power Plant	VCS	Hydro	Turkey	Europe	2019	22,219	NO	VCS1427
2021	Adiguzel II Hydroelectric Power Plant	VCS	Hydro	Turkey	Europe	2020	19,702	NO	VCS1427
2021	Adiguzel II Hydroelectric Power Plant	VCS	Hydro	Turkey	Europe	2018	21,506	NO	VCS1427
2021	Wind Power Project at Gujarat by Powerica Limited	VCS	Wind	India	Asia	2020	2,450	NO	VCS701
2021	Wind Power Project at Gujarat by Powerica Limited	VCS	Wind	India	Asia	2020	15,314	NO	VCS701
2021	Anhui Guzhen Biomass Generation Project	VCS	Biogen	China	Asia	2018	16,833	YES	VCS1121
2021	Liangdu Afforestation Project	VCS	Forestry	China	Asia	2019	15,512	NO	VCS2083
2021	CECIC HKE Zhangbei Lvnaobao Wind Power Project	VCS	Wind	China	Asia	2019	14,399	NO	VCS727
2021	CECIC HKE Zhangbei Lvnaobao Wind Power Project	VCS	Wind	China	Asia	2017	49	NO	VCS727
2021	Bundled Wind Power Project by Myrtah Group	VCS	Wind	India	Asia	2020	11,334	NO	VCS1728
2021	Bundled Wind Power Project by Myrtah Group	VCS	Wind	India	Asia	2017	239	YES	VCS1728
2021	Bundled Wind Power Project by Giriraj Enterprises	VCS	Wind	India	Asia	2020	2,178	NO	VCS1669
2021	TATAR HYDRO ELECTRICITY POWER PLANT	VCS	Hydro	India	Asia	2019	10,000	NO	VCS1205
2021	Tatar Hydro Electricity Power Plant	VCS	Hydro	India	Asia	2019	100	NO	VCS1205
2022	KEO SEIMA REDD+ WILDLIFE SANCTUARY	VCS	Forestry	Cambodia	Asia	2019	966	No	VCS 1650
2022	KEO SEIMA REDD+ WILDLIFE SANCTUARY	VCS	Forestry	Cambodia	Asia	2019	23,381	No	VCS 1650
2022	KEO SEIMA REDD+ WILDLIFE SANCTUARY	VCS	Forestry	Cambodia	Asia	2019	619	No	VCS 1650
2022	KEO SEIMA REDD+ WILDLIFE SANCTUARY	VCS	Forestry	Cambodia	Asia	2019	40,000	No	VCS 1650

2022	KEO SEIMA REDD+ WILDLIFE SANCTUARY	VCS	Forestry	Cambodia	Asia	2019	102	No	VCS 1650
2022	KEO SEIMA REDD+ WILDLIFE SANCTUARY	VCS	Forestry	Cambodia	Asia	2019	11,034	No	VCS 1650
2022	FLORESTAL SANTA MARIA REDD +	VCS	Forestry	Brazil	South America	2019	92,000	No	VCS 875
2022	FLORESTAL SANTA MARIA REDD +	VCS	Forestry	Brazil	South America	2019	81,898	No	VCS 875
2022	GLOBAL EMISSIONS OFFSET (GEO) - Thai Renewables	VCS	Wind	Thailand	Asia	2020	3,187	Yes	VCS 2002
2022	GLOBAL EMISSIONS OFFSET (GEO) - Thai Renewables	VCS	Wind	Thailand	Asia	2020	26,479	Yes	VCS 2002
2022	GLOBAL EMISSIONS OFFSET (GEO) - Thai Renewables	VCS	Wind	Thailand	Asia	2020	813	Yes	VCS 2002
2022	GLOBAL EMISSIONS OFFSET (GEO) - Thai Renewables	VCS	Wind	Thailand	Asia	2020	19,521	Yes	VCS 2002
2022	78 MW AKOCAK HYDROELECTRIC POWER PLANT	VCS	Hydro	Turkey	Europe	2019	10	No	VCS 535
2022	78 MW AKOCAK HYDROELECTRIC POWER PLANT	VCS	Hydro	Turkey	Europe	2019	39,978	No	VCS 535
2022	78 MW AKOCAK HYDROELECTRIC POWER PLANT	VCS	Hydro	Turkey	Europe	2019	1	No	VCS 535
2022	78 MW AKOCAK HYDROELECTRIC POWER PLANT	VCS	Hydro	Turkey	Europe	2019	11	No	VCS 535
2022	ASLANCIK HYDROELECTRIC POWER PLANT	VCS	Hydro	Turkey	Europe	2019	63,710	No	VCS 535
2022	ASLANCIK HYDROELECTRIC POWER PLANT	VCS	Hydro	Turkey	Europe	2019	27,290	No	VCS 535
2022	HYDROELECTRIC PROJECT IN KINNAUR DISTRICT IN HIMACHAL PRADESH	VCS	Hydro	India	Asia	2019	4,200	No	VCS 1742
2022	HYDROELECTRIC PROJECT IN KINNAUR DISTRICT IN HIMACHAL PRADESH	VCS	Hydro	India	Asia	2019	50,000	No	VCS 1742
2022	HYDROELECTRIC PROJECT IN KINNAUR DISTRICT IN HIMACHAL PRADESH	VCS	Hydro	India	Asia	2019	14,800	No	VCS 1742
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2020	381,402	No	VCS 2291
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2021	18,180	No	VCS 2291
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2019	7,925	No	VCS 2291
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2020	34,297	No	VCS 2291
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2020	100,429	No	VCS 2291
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2019	36,480	No	VCS 2291
2022	CORE GLOBAL EMISSIONS OFFSET (C-GEO)	VCS	Fugitive emissions	China	Asia	2021	11,287	No	VCS 2291
2022	Capricorn Ridge Wind 4*	VCS	Wind	USA - Texas	North America	2019	10,000	No	VCS 468
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	9,000	No	VCS 2539
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	11,000	No	VCS 2539
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	2,000	No	VCS 2539
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	6,000	No	VCS 2539
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	2,000	No	VCS 2539
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	6,000	No	VCS 2539
2022	Evergreen REDD+	VCS	Forestry	Brazil	South America	2021	14,000	No	VCS 2539
2022	Katingan Peatland Restoration	VCS	Forestry	Indonesia	Asia	2020	1,000	No	VCS 1477
2022	Katingan Peatland Restoration	VCS	Forestry	Indonesia	Asia	2020	99,000	No	VCS 1477
2023	Boone Forestry Project (Mercuria)	ACR	Afforestation	USA	North America	2020	200,000	Yes	ACR596
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	49,500	Aligned	ACR766
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	26,779	Aligned	ACR766
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	20,500	Aligned	ACR766
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	2,721	Aligned	ACR766
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	10,000	Aligned	ACR766
2023	Arizona Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	100,000	Aligned	ACR768
2023	Arizona Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2021	9,500	Aligned	ACR768
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2020	68,386	Yes	ACR624
2023	Missouri Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2020	31,614	Yes	ACR624
2023	Arizona Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2020	20,340	Yes	ACR620
2023	Arizona Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2020	20,235	Yes	ACR620
2023	Arizona Foam Blowing (Ozone Depleting Substances)	ACR	HFCs	USA	North America	2020	44,425	Yes	ACR620
2023	Ejido Tutuaca	CAR	Afforestation	Mexico	North America	2021	26,029	No	CAR1660
2023	Ejido Tutuaca	CAR	Afforestation	Mexico	North America	2021	27,808	No	CAR1660
2023	BMT Solar	GS	Solar	Vietnam	Asia	2020-2021	25,935	Aligned	GS7526
2023	BMT Solar	GS	Solar	Vietnam	Asia	2020-2021	12,065	Aligned	GS7526
2023	Ami Khanh Hoa Solar	GS	Solar	Vietnam	Asia	2020-2021	734	Aligned	GS7551
2023	Ami Khanh Hoa Solar	GS	Solar	Vietnam	Asia	2020-2021	22,806	Aligned	GS7551
2023	Ami Khanh Hoa Solar	GS	Solar	Vietnam	Asia	2020-2021	13,946	Aligned	GS7551
2023	Ami Khanh Hoa Solar	GS	Solar	Vietnam	Asia	2020-2021	514	Aligned	GS7551
2023	Thai wind	GS	Wind	Thailand	Asia	2020	80,688	Aligned	GS7744
2023	Thai wind	GS	Wind	Thailand	Asia	2021	62,503	Aligned	GS7744
2023	Thai wind	VCS	Wind	Thailand	Asia	2021	307	No	VCS1999
2023	Thai wind	VCS	Wind	Thailand	Asia	2021	629	No	VCS2002
2023	Thai wind	VCS	Wind	Thailand	Asia	2021	322	No	VCS2002
2023	Evergreen REDD+ Project	VCS	Forest ecosystem restoration	Brazil	South America	2021	13,000	No	VCS2539
2023	Evergreen REDD+ Project	VCS	Forest ecosystem restoration	Brazil	South America	2021	2,000	No	VCS2539
2023	Katingan Peatland Restoration and Conservation Project	VCS	Forest ecosystem restoration	Indonesia	Asia	2020	1,643	No	VCS1477
2023	Katingan Peatland Restoration and Conservation Project	VCS	Forest ecosystem restoration	Indonesia	Asia	2020	1,643	No	VCS1477
2023	Katingan Peatland Restoration and Conservation Project	VCS	Forest ecosystem restoration	Indonesia	Asia	2020	46,714	No	VCS1477
2023	Malawi/Zambia Cookstoves	VCS	Clean cookstove distribution	Malawi/Zambia	Africa	2022	30,000	Aligned	VCS2371
2023	Malawi/Zambia Cookstoves	VCS	Clean cookstove distribution	Malawi/Zambia	Africa	2022	1,000	Aligned	VCS2372
2023	Malawi/Zambia Cookstoves	VCS	Clean cookstove distribution	Malawi/Zambia	Africa	2022	22,296	Aligned	VCS2372
2023	Malawi/Zambia Cookstoves	VCS	Clean cookstove distribution	Malawi/Zambia	Africa	2022	22,296	Aligned	VCS2372
2023	Malawi/Zambia Cookstoves	VCS	Clean cookstove distribution	Malawi/Zambia	Africa	2022	29,442	Aligned	VCS2372
2023	Improved Cookstoves for Burundi Restaurants	VCS	Clean cookstove distribution	Burundi	Africa	2021	100,000	Aligned	VCS2540
2023	Bangladesh Methane Gas Collection/Destruction	VCS	Fugitive	Bangladesh	Asia	2020	65,565	Yes	VCS2478
2023	Bangladesh Methane Gas Collection/Destruction	VCS	Fugitive	Bangladesh	Asia	2020	53,747	Yes	VCS2478

2023	Bangladesh Methane Gas Collection/Destruction	VCS	Fugitive	Bangladesh	Asia	2021	34,368	Aligned	VCS2930
2023	Bangladesh Methane Gas Collection/Destruction	VCS	Fugitive	Bangladesh	Asia	2021	999	Aligned	VCS2930
2023	Bangladesh Methane Gas Collection/Destruction	VCS	Fugitive	Bangladesh	Asia	2021	1	Aligned	VCS2930

Total Retired Offsets 2020	1,485,000 mtCO ₂ e
Total Retired Offsets 2021	1,207,500 mtCO ₂ e
Total Retired Offsets 2022	1,250,000 mtCO ₂ e
Total Retired Offsets 2023	1,303,000 mtCO ₂ e
Total Retired Offsets	5,245,500 mtCO₂e

Appendix B: Commercial aircraft fuel efficiency

Model	Reduction in Fuel Consumption	Comparative Airplane	Evaluation Mission
737-8 (162 seats)	~20% lower fuel use and CO ₂ emissions per seat	737-800 (no winglet) (162 seats)	1,500 nmi
787-8 (248 seats)	~25% lower fuel use and CO ₂ emissions per seat	767-300ER (no winglet) (197 seats)	3,000 nmi
777-9 (426 seats)	~20% lower fuel use and CO ₂ emissions per seat	777-300ER (392 seats)	6,000 nmi
777-8F (max structural payload)	~30% lower fuel use and CO ₂ emissions per tonne	747-400F (max structural payload)	3,000 nmi
<i>Efficiency estimates are based on standardized aircraft configurations and operational assumptions. Airline configuration and operational choices may affect estimates and in-service results</i>			